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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,926	11/26/2003	Jon J. Morrow	061300-0356	9800
26371 7590 04/07/2006 FOLEY & LARDNER LLP 777 EAST WISCONSIN AVENUE SUITE 3800 MILWAUKEE, WI 53202-5308			EXAMINER SWENSON, BRIAN L	
			ART UNIT 3618	PAPER NUMBER

DATE MAILED: 04/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/723,926	MORROW, JON J.	
	Examiner	Art Unit	
	Brian Swenson	3618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-77 is/are pending in the application.
- 4a) Of the above claim(s) See Continuation Sheet is/are withdrawn from consideration.
- 5) ☒ Claim(s) 74 is/are allowed.
- 6) ☒ Claim(s) 1-5, 20-22, 25-28, 30, 35-37 and 59-63 is/are rejected.
- 7) ☒ Claim(s) 7-15, 38-47, 50, 53, 54, 58 and 65-71 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/26/03</u> . | 6) <input type="checkbox"/> Other: _____ |

Continuation of Disposition of Claims: Claims withdrawn from consideration are 6,16-19,23,24,29,31-34,48,49,51,52,55-57,64, 72-73 and 75-77.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Species X: Figures 13-14 in the reply filed on 12 January 2006 is acknowledged.
2. Claims 16-17, 18-19, 29 and 72-73 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim.

In regards to claims 16-17 and 72-73 it appears the differential claimed is drawn to differential 154, shown in Figure 2, Species II.

In regards to claims 18-19 and 29, as best understood the first and second output shafts are elements 1232 and 1234 in elected Species X. These output shafts are not coupled to first and second wheels on the same axle. It is also believed that the output shafts are not able to provide power to one side of the vehicle and not to the other, since power is provided to directly to the differential units shown in Figure 13, which provide the power to the outside ground motive members.

An action on the merits of Claims 1-5, 7-15, 20-22, 25-28, 30, 35-47, 50, 53-54, 58-63, 65-71 and 74 follows.

Specification

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

4. Claim 8 is objected to because of the following informalities:

“first electric motor/generator” should be changed to – first motor generator – for consistency and to provide antecedent basis with claim 7.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 5, 22, 26, 59 and 63 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,935,035 issued to Schmidt.

Schmidt teaches in Figures 1-2 and respective portions of the specification teaches of a vehicle comprising: a first prime mover (16 motor generator Col. 1, line 60); a first output shaft (74); a second output shaft (82); and a first planetary gear assembly (20) including: a first sun gear (30); a first ring gear (32); and a first plurality of planetary gears (22) supported between the first ring gear and the first sun gear (30) by a first carrier (34), wherein one of the first sun gear and the first ring gear is coupled to the first prime mover (ring is coupled to the carrier as shown in Figure 1), wherein the other of the first ring gear and the first sun gear is coupled to the first output shaft (sun gear is coupled to output shaft; see Figure 1 and Col. 2, lines 25-26) and wherein the first carrier is coupled to the second output shaft, see Figure 1 where carrier is coupled to

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second output shaft with elements 76,78 and 80. Schmidt teaches of a hybrid drive control unit (ECU) for controlling the vehicle based on torque requirements.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2-4 and 60-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt.

Schmidt discloses the claimed invention except for teaching of the first carrier being selectively coupled to the second output shaft or the first carrier being selectively coupled to the first sun gear.

Clutches are well known in the art for selectively disengaging rotating assemblies. Schmidt shows a clutch (40) for coupling engine (12) with ring gear (32). It would have been obvious to one having ordinary skill in the art at the time of invention to provide a clutch for selectively coupling the carrier (32) with the second output shaft. It would also have been obvious to one having ordinary skill in the art at the time of invention to provide a clutch for selectively coupling the carrier (32) with the sun gear. One would be motivated to provide a clutches to allow for an optimal power flow path, where all the power is directed to either the first or second output shafts.

7. Claims 20-21, 30 and 35-37 and are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt in view of U.S. Patent No. 6,691,809 issued to Hata et al.

Schmidt discloses the claimed invention including showing two output shafts (74) and (82). Schmidt does not show either output shaft connected with reduction unit and wheels.

Hata et al. teaches in Figures 1-8 and respective portions of the specification of a power splitting drive for a hybrid vehicle including teaching of first and second output shafts powering axles with differential reduction units (see elements 52 and 62 in Figure 1). It would be obvious to one having ordinary skill in the art at the time of invention to provide a differential reduction drive unit, as taught by Hata et al., in the invention taught by Schmidt. One would be motivated to provide a differential reduction drive unit to provide a high amount of torque at the vehicle's output. One would be motivated to provide a vehicle drive on the PTO output shaft (output 82 taught by Schmidt) to provide two axles that drive.

In regards to claim 35-37, Schmidt as modified by Hata et al. disclose the claimed invention except for stating if 30% or 50% of the drive power generated is transferred to the first output shaft and 70% or 50% of the second drive power is transferred to the second output shaft. It would have been obvious to one having ordinary skill in the art at the time of invention to transfer a discreet percentage of the drive power generated is transferred to the first output shaft and a discreet percentage of the second drive power is transferred to the second output shaft controlled by the ECU, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

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8. Claims 25 and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt in view of U.S. Patent No. 6,578,648 issued to Bell.

Schmidt discloses the claimed invention except for teaching of a central tire inflation system.

Bell teaches in Figures 1-5 and respective portions of the specification of a drive axle control system, and Bell teaches in Col. 4, lines 34-40 that it is known in the vehicle art to provide central tire inflation systems and control systems for the tire inflation systems. It would have been obvious to one having ordinary skill in the art at the time of invention to use the teachings of Bell for providing a central tire inflation system in the invention taught by Schmidt. One would be motivated to provide the tire inflation system to provide automated control of the tire's pressure.

Allowable Subject Matter

9. Claim 74 allowed.

10. Claims 7-15, 38-47, 50, 53-54, 58, 65-71 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The primary reason for the indication of allowable subject matter in this case is the inclusion of: a vehicle with a first and second output shaft, each coupled to an axle, where the vehicle further includes an internal combustion engine and a first and second motor generator; a first planetary gear assembly, where the sun gear is coupled to the first motor generator and one of the ring gear and carrier is coupled to the engine; a drive train coupled between the second output shaft and either the carrier or first ring

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gear; and a second planetary assembly coupled to the second motor generator, the first output shaft and the second output shaft, in combination with the other elements recited, not found in the prior art or record.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,557,656 issued to Haniu et al. teach of a driving system with an engine and two driving motors.

U.S. Patent No. 6,041,877 issued to Yamada et al. teach of a drive unit for a hybrid vehicle.

U.S. Patent No. 6,306,056 issued to Moore teach of a duel engine hybrid vehicle.


U.S. Patent No. 6,387,007 issued to Fini, Jr., U.S. Patent No. 6,135,914 issued to Yamaguchi et al., and U.S. Patent No. 5,927,417 issued to Brunner et al. all teach of other various drive arrangements.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Swenson whose telephone number is (571) 272-6699. The examiner can normally be reached on M-F 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Ellis can be reached on (571) 272-6914. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

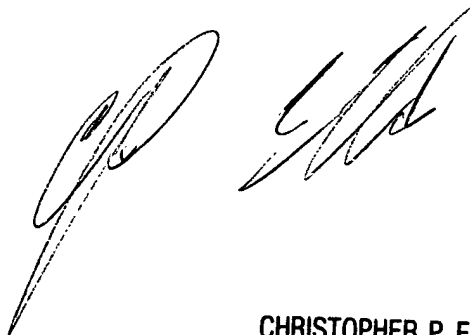
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 3/31-06

bls

Brian Swenson
Examiner
Art Unit 3618



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